DOCUMENT RESUME

ED 198 495 CS 005 895

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TITLE Reading in Bookkeeping: The Use of Job and Curriculum Task Analyses.
PUB DATE Jan 81
NOTE 94p.; M.Ed. Thesis, Rutgers The State University of New Jersey.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Bookkeeping; Job Analysis; Job Skills; *Occupational Surveys; Office Occupations Education; *Reading Research; *Reading Skills; *Task Analysis

ABSTRACT

A study was conducted to discover what reading skills were required by employers for entry-level bookkeepers, what reading skills were rated as being important in the bookkeeping curriculum, and what the relationship was between the existing bookkeeping curriculum and employment requirements. A job reading task analysis (JRTA) was prepared and sent to 40 employers in three New Jersey counties. A variation of this checklist, the curriculum reading task analysis (CRTA), was sent to 25 school districts in the same three counties. Findings indicated that (1) reading skills for bookkeeping consist of those needed for understanding subject matter (reading-to-learn) and those that can be transferred beyond the classroom to the world of work (reading-to-do), (2) the JRTA could be used as a predictor for determining the reading needs of an entry-level bookkeeper, (3) the CRTA could be used as an informal means of assessing the reading skills considered important in the bookkeeping curriculum, and (4) 57% of the CRTA priorities were transferable to the job world. (HOD)

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READING IN BOOKKEEPING: THE USE OF JOB AND CURRICULUM TASK ANALYSES

A THESIS

SUBMITTED TO THE FACULTY

OF THE GRADUATE SCHOOL OF EDUCATION

OF

RUTGERS

THE STATE UNIVERSITY OF NEW JERSEY

BY

ANN E. VISINSKI

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

MASTER OF EDUCATION

NEW BRUNSWICK, NEW JERSEY JANUARY, 1981

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CHAPTER I

INTRODUCTION

Background of the Problem

According to West (1973), major discrepancies presently exist between the school bookkeeping curriculum and employment requirements. To alleviate this problem, authorities in both the reading and business fields recommend two courses of action. First, House (1953) and Musselman (1959) suggest that teachers determine the reading problems faced by bookkeeping students. Secondly, reading specialists (Sticht, 1975) encourage the use of a job reading task analysis to identify the specific reading skills necessary for job success. Infusing a specific reading approach with the bookkeeping curriculum, according to the research, will lead to better student achievement immediately in high school and ultimately in the world of work.

Statement of the Problem

In an attempt to corroborate the findings of the present research, this study will draw conclusions based on the following questions:

1. What reading skills are required by employers for entry-level bookkeepers?

2. According to teachers, what reading skills are rated as being important in a bookkeeping curriculum?

3. What is the relationship between the existing bookkeeping curriculum and employment requirements?

Importance of This Study

New Jersey school systems are presently operating under the concept of "Thorough and Efficient" education. In addition, the State also mandates career awareness programs in grades K-12.

This study will provide a basis for highlighting and developing the reading skills necessary for functional literacy (reading-to-do) in a particular job area. Emphasis will be placed on those reading skills required for entry-level positions.

Definition of Terms

When using specific terminology in this thesis, the following definitions will apply:

Bookkeeping Skills - Those reading skills necessary for understanding subject matter; i.e., vocabulary and comprehension of material.

Reading to Learn - A person learns and remembers what has been read for some future use (Seifert, 1979).

Reading to Do - A person is involved in the short-term processing of information for more-or-less immediate use (Sticht, 1975).

Job Reading Task Analysis (JRTA) - A survey which establishes the requirements needed to perform the day-to-day reading tasks of a job (Sticht, 1975).

Curriculum Reading Task Analysis (CRTA) - A survey which establishes the reading requirements needed to comprehend subject matter.

Infusion Process - The introduction of reading skills necessary for job success without changing the basic content of the course (EIC, 1979).

Limitations of This Study

Through the use of the JRTA and CRTA, this study will determine guidelines for curriculum modification in the area of bookkeeping, infusing the reading skills necessary for job success.

Major problems involved in this study include the time limitation and the number of actual responses from employers and teachers surveyed. It should be noted also that the survey will be limited to a specific area. Finally, all data collected were voluntarily offered and may not necessarily reflect the opinions of all employers and teachers.

CHAPTER II

REVIEW OF THE LITERATURE

Infusing reading with a bookkeeping curriculum is an important concept. It is generally acknowledged by researchers that specific reading skills are necessary not only for immediate comprehension of the high school content but also for the long-range goal of a successful career.

The focus of the literature review concerns four major factors of a bookkeeping curriculum. Arranged in chronological order, the studies involve a discussion of the reading problems existing in business subjects with special emphasis on bookkeeping. These reading factors are vocabulary difficulty, reading abilities of bookkeeping students and difficulty of text materials. The final, and most recent, factor reviewed centers on a career-oriented approach to teaching reading skills in business subjects.

As early as 1953, House recognized that students faced serious reading problems in their study of bookkeeping. He conducted 376 interviews with bookkeeping students and through the use of formal and informal measures reached some fundamental conclusions. House

determined that the reading difficulties were divided into three major areas: the technical vocabulary, the reading difficulty of text materials, and the wide range of reading levels among students enrolled in these classes. Based on these findings, House introduced the need for reading in the content areas, and, more importantly, instilled in the business teachers an awareness for the infusion of reading and bookkeeping skills.

After a six-year period, Musselman (1959) again broached the reading problem in bookkeeping. He reiterated the findings of House and presented strategies for alleviating these deficiencies. Although Musselman did not test any of his strategies, he presented an important viewpoint. The author reported that a bookkeeping class should be a period of instruction not only of the mathematical skills required but also of the reading skills necessary for successful study. He further stated that the classroom should be used for teaching and not as a period of constant recitation and testing. In fact, Musselman was a proponent of the infusion process.

The late sixties introduced two studies centering on statistical evidence about reading problems in bookkeeping. Rhodes and Calhoun (1967) examined student reading abilities as they affected the study of

bookkeeping. Students from five Georgia high schools participated in the study. The 162 students were from a variety of socioeconomic levels and ranged from grades nine through twelve. Each student was given the Nelson-Denny Reading Test measuring the reading skills of vocabulary, comprehension, and reading rate. After formal bookkeeping instruction, these reading scores were compared with those achieved on standardized bookkeeping tests based on the textbook used.

Rhodes and Calhoun concluded that there was a significant correlation between bookkeeping achievement and the factors of reading comprehension and vocabulary (.56 and .47 respectively). Furthermore, they indicated that this type of study could be used as a predictor of bookkeeping success, but only within broad limitations. Finally, and perhaps most significantly, Rhodes and Calhoun determined that there was a need for reading instruction in the bookkeeping classes to ensure student success.

Calhoun (1968) continued his investigation into the reading problems in bookkeeping. In this study, he focused on the readability of the textbooks. Using the same basic procedure as in the previous study, Calhoun compared the student reading achievement with the readability of some widely used bookkeeping textbooks (titles not given). Based on the Flesch readability formula,

he concluded that the readability range of the texts were sixth grade to college level and reading achievement for these high school students ranged from seventh grade to college, but one-half of the students were reading below school grade level. Calhoun strongly suggested that the reading difficulty of the texts be considered before use in the classroom since the traditional instructional materials would be frustrating for most students.

A digression from statistical evidence occurred in the late sixties. The report by Robinson, Carter, and Hokanson (1969) served as a reiteration of the initial study concerning reading problems in bookkeeping (House, 1953). It did state, however, that one of the basic objectives for any business teacher should be instructing pupils in the necessary reading skills for successful acquisition of materials. The authors presented the goals of the reading objective and emphasized teacher attitude as especially important. Beyond the superficial reading skills, nothing innovative was added to the field.

The 1970's provided a plethora of studies dealing with the reading problems in bookkeeping. In addition, a new concept emerged in classroom instruction; i.e., the career-oriented approach to content. More serious consideration had been given to the reading factors

affecting student achievement. More importantly, there had been a concerted effort to make those skills taught in the classroom relevant to those needed in the world of job employment.

Hafner, Gwaltney, and Robinson conducted a study (1971) to determine the effects of intelligence, reading ability, and teacher ratings on successful bookkeeping achievement. The students were, again, from a Georgia high school. Each student was administered a series of tests (two of them using a Cloze procedure), and the results were compared with teacher ratings and grades achieved. The results were significant. Teacher expectation was normally higher than actual student performance. Moreover, teachers had difficulty predicting student ability to read and comprehend the textbook. Student ability to punctuate running bookkeeping text and the ability to score well on the standardized tests related significantly to the ability to read text materials. Finally, the Cloze tests were viewed as the most accurate predictors of scores of intelligence and achievement measures (bookkeeping content .69; punctuation .60). These men provided some interesting observations concerning teacher ability to predict student performance. In addition, they indicated that the less formal testing procedures; i.e., Cloze, produced more valuable results than the standardized tests

furnished by publishers.

Through a research review, Anderson (1971) again reported the need to teach reading in business subjects. She restated the need to determine the necessary reading skills and emphasized that high school students did need reading instruction if they were to achieve in the content area. This article served as a reinforcement of previous ones with no new theories or strategies suggested.

In the abstract of her study, Lacy (1971) stated the findings of her investigation into the duties and characteristics of a full-charge bookkeeper. The purpose of this study was to research the type of job activities involved in bookkeeping and determine the frequency with which each was performed. In addition, an attempt was made to evaluate the educational background, experience, and characteristics of a full-charge bookkeeper.

Although reading was not a specific factor under investigation, some conclusions may be inferred from this abstract. Not only the procedures involved in using ledgers but knowledge of terminology applicable to the ledger would be necessary. The ability to use technical vocabulary would be helpful in comprehending invoices and applying identifying codes or simplifying material. Finally, the analysis approach was used as a viable method for determining specific needs and requirements.

Strategies for teaching reading could be important, especially for the novice teacher. Several intermittent articles appeared in this decade in an attempt to aid the content teacher. These articles, although not substantiated, should not be omitted since they provided a "starting point" for reading instruction in the content areas.

In 1971, Marani and Calder presented "Six Questions to Improve Reading Skills." The article focused on introducing technical vocabulary to students. It was intended to be a "hands on" approach to learning the specialized vocabulary through use of visual discrimination and configuration. In addition, student developed recognition of sound patterns needed to decode unfamiliar words. Lastly, meanings were learned in the context of the subject area, not in isolation, and students were instructed in the use of proper dictionary skills. The authors did not purport these strategies to be a panacea for the vocabulary problem, only that these were suggestions to be used or rejected.

Continuing with the same philosophy, Notestine (1972) presented a method for increasing reading comprehension skills. He suggested exposure to reading material found in the business world as opposed to those materials strictly used by classroom teachers. Notestine further theorized that these materials could

serve as the basis for reports (oral and written) and as an introduction to a career awareness program. Unfortunately, the author did not substantiate his claims of improving reading comprehension. He did, however, present some feasible innovations to reading instruction in business subjects.

Reading-to-do has become an important element of today's society. West (1973) reported his findings concerning requirements needed to succeed in a bookkeeping job as compared to the material taught in a high school curriculum. He interviewed 597 people employed by 337 private companies. Through the use of oral and written questionnaires, he obtained a list of the skills necessary to succeed in the bookkeeping field. West then interviewed job analysis concerning the skills not taught in high schools. His results showed a low transfer of school learning to job performance and, in fact, concluded that high school instruction extended beyond what employers wanted in some areas and neglected to represent some of the duties necessary for entry-level bookkeepers. West's intent was to demonstrate the need for curriculum modification through the use of a job task analysis. Even though the analysis was composed of both mathematical and reading requirements, the implications were obvious. West concluded the need for such analyses to determine instruction in the content areas. Through the

job task analysis, West incorporated some fundamental principles for the content areas--career awareness and functional literacy.

In still another literature review, Walters (1973) provided a compilation of studies to date concerning the reading problems encountered in business subjects. It was the author's intent to show the importance of curriculum modification to include the improvement of reading and study skills. Having reviewed the literature of the previous fifteen years, Walters analyzed the recommendations and condensed them into one report. His basic findings did not alter any of those already stated. He recommended that bookkeeping teachers should focus on vocabulary instruction, assessment of difficulty of instructional materials, development of techniques for interpreting content, and instruction in the proper use of the textbook. Walters offered no concrete strategies and his report simply served as a reiteration of preceding information.

Ahrendt and Haselton wrote two reports in 1973 dealing with the reading problem in bookkeeping. The first listed the essential reading skills and the second provided an informal skills assessment for determining student strengths and weaknesses.

The first article dealing with the essential reading skills presented no new insight to reading problems

encountered in bookkeeping. It was, in fact, another compilation of the reports presented in the 1950's. The article did suggest the use of SQ3R and teaching vocabulary in context. It also emphasized the role of the teacher in aiding student success. The article, however, was no more than a summary of the basic reading factors in bookkeeping instruction.

The authors' second article was more productive. They suggested the use of informal measures to determine the instructional reading levels of students. Again, no actual study was undertaken. Their conclusions and sample inventory were based on the writings and studies of various authors and universities.

The authors purported that through the use of an inventory, individual strengths and weaknesses could be identified. Additionally, the teacher could identify the amount of background material or raw material each student possessed. The authors then presented a sample bookkeeping inventory involving four major areas: (1) understanding technical terms related to bookkeeping (in context), (2) using mathematical knowledge to solve problems (new material), (3) following directions (previously learned material), and (4) spelling correctly.

Based on such an inventory, the authors asserted that student reading levels could be classified as

independent, instruction, and frustration. The significance of this strategy is two-fold. First, the teacher determined the necessary skills, not a publisher. Second, the teacher then had a basis for infusing specific reading skills instead of "guessing." Although some statistical proof as to the inventory's effectiveness would have proven valuable, the basic premise was viable. It might serve also to eliminate some textbook bias. Finally, the inventory would lend itself to a more career-oriented approach to content since the majority of evaluations made on the job are of an informal nature rather than in a testing situation.

According to Scott (1974), reading rate had been a neglected factor in classroom instruction. He performed a study with high school students in grades ten through twelve. All were enrolled in business subjects. Scott concluded the average student read at approximately 283 words per minute with four percent reading at 100 words per minute or less and five percent reading between 501-660 wpm. The author also concluded that the content determined rading speed for most of the subjects surveyed. If the student subvocalized or demonstrated a general lack of background experience, the reading rate decreased. Scott also determined that the general approach to the reading task hindered reading rate. Overall, the author felt this factor should be

considered when giving a reading assignment. He suggested some strategies for the business teacher. Teachers should be aware of the wide dispersion of reading rates and compensate for them. Teachers should preview assignments, identify specific tasks to be accomplished and avoid lengthy assignments to be read at any one time. Although Scott seemed to have verified his belief that reading rate was a major problem, he failed to consider this as an element of the larger category of reading ability. He also neglected to check comprehension at specific rates. Therefore, his findings might not be significant enough to warrant teaching speed-reading in a bookkeeping curriculum.

The problem of textbook readability was again explored in the 1970's. Hopkins (1974) attempted to replicate the earlier studies by Calhoun. Three specific textbooks were assessed for their readability ranges using the Flesch "Reading Ease" formula. The Price et al. textbook (General Business for Everyday Living) indicated the lowest readability averaging at the sixth grade level but included some material ranging through college. DeBraum, et al. (General Business for Economic Understanding) averaged seventh and eighth grades and Nanassy, et al. (General Business and Economic Understanding) contained a readability range of high school. The author concluded that the

difficulty of textbooks was a major factor in reading achievement and comprehension of subject matter. This assumption, however, was not compared to any student achievement and the only concrete result would be a need for considering textbook materials in any content classroom.

Merrick and Chickadonz published a study (1974) in which this career-oriented approach was used in bookkeeping and accounting classrooms. The objectives of this program were to overcome student failure in the high school course and, eventually, to aid student success in a specific career. The program, instituted in the Los Angeles Unified School District, was based on employer requirements of entry-level job skills. The initial determinations for the course involved the community, teachers, and administrators. Having identified the critical tasks needed, basic core units of instruction were established. Students were given an orientation period and provided with an office-simulated environment. Evaluations were informed based on performance and knowledge acquired through "doing" instead of regimented written tests. Teacher-student conferences periodically checked student progress and allowed for further aid in overcoming individual weaknesses. Unfortunately, at the time of publication, only empirical results were available. These, however,

gave an indication of the program's eventual success. Student discipline was no longer a factor in the classroom. Pupils developed better work habits and indicated satisfaction with this new approach. Perhaps, most importantly, those students who would have left the formal school environment no longer expressed the desire to do so. Based solely on these observations, the program had excellent potential and its importance to curriculum modification should not be ignored.

Continuing with the concept of reading requirements for careers, the International Reading Association published a compilation of reports in this area (Nielson & Hjelm, eds., 1975). Ahmann attempted to define the term "functional literacy" and explain the school's role in providing graduates with command of the necessary reading skills. Based on a contract with the National Assessment of Educational Progress Committee, the author reported findings of a study to measure functional literacy levels of seventeen-year-old students. The definitions formulated by the Right to Read Advisory Council (1973), UNESCO and NAEP were employed. A matrix classification scheme (Mosteller, 1974), National Assessment exercises and social indicators (U.S. Office of Management and Budget, 1973) were also used. The results were in the form of statements rather than statistics. Ahmann concluded that

the lack of a widely-accepted definition of functional literacy provided serious limitations for any feasible study. Ahmann stated that the exercises developed by the National Assessment Committee would prove an invaluable source of testing materials. What was concluded by the author was the need for further information about determining levels of literacy and a more detailed approach to recognizing the kinds of reading achievement needed for job success.

In the same book, Jervis reported on the concept of career education and reading infusion. This study was significant because the report was based on a program already established in a school district. In Anne Arundel County, an infusion program was instituted centering on four distinct phases of instruction and internalized the objective of career education into the total school program.

Phase I established four basic skills to be explored (communication, computation, manual dexterity, and group organization). Phase II analyzed career education goals and objectives which had significance for a reading and language arts curriculum at specific levels of instruction. Phase III determined Writing Instruction objectives and specific behavioral objectives to achieve integration. The final phase designed relevant activities to achieve those objectives. The

author stated that since evaluation would be an on-going process, no formal statistics were reported. Jervis did state that a third-party evaluation would be used to determine effectiveness of the program and aid in the program's revision. The author also mentioned the need for further investigation and workshops established to acquaint content teachers with this approach.

The program was important as an innovative approach to existing teaching methods. It was a necessary concept and one which should not be overlooked as an alternative to rigid textbook teaching. This study could revolutionize teaching in the content areas.

In the same publication, Levin continued the philosophy of career awareness in the classroom. She stated the ultimate aim of education should be to produce graduates who could function successfully in a given career. According to the author, this success was based on the knowledge of specific reading skills. Levin suggested seven steps to the infusion process. First, general skills and then specific reading skills should be determined. Instructional sequences based on these two steps should be established. Teachers should then assess student reading levels and needs, match materials to students, plan instructional strategies, and, finally, set up criteria for evaluation. Although the report was general, the concepts were

valuable and provided excellent background information for content teachers.

Sticht has established himself as an authority in the field of Reading and Career Education. His major work, Reading for Working (1975), incorporated the use of job task analyses, performance tests, and employer-employee interviews as the basis for determining literacy requirements. Sticht and McFann abbreviated the results of his studies in the book, Reading and Career Education (1975). In this report, they demonstrated the findings of such methods as a means of determining literacy skills. The authors concluded that different job required different reading levels ranging as low as fourth grade to as high as twelfth. The job reading task test appeared to be the best procedure for determining necessary reading skills since it was the only direct measure of a person's ability to function at various reading levels. The least accurate method was the analyst's judgments since these were basically subjective, devoid of any evaluative criteria.

Even though the work of Sticht concerned only military personnel, the methods employed served as a prototype for subsequent studies. His use of analyses, instead of textbooks, would provide a feasible alternative to determining the skills needed for reading-to-do. The methods would also allow for

relevance in content areas and provide positive transfer of reading skills necessary to compete successfully in a career.

Deviating from the career-oriented approach, the problem of textbook readability had been explored once again. Calhoun and Horner (1975) compared readability of four widely used textbooks with student reading level. The procedure used was similar to that of the previous Calhoun studies. The results concluded that 32.9% of the students read below tenth grade level while 21.9% read at better than twelfth grade. Although the specific texts were not named, the study concluded that the materials were written above the expected range of student reading ability. This last study by Calhoun corroborated previous findings and seemed to indicate that publishers still had neglected to alleviate the problem of textbook difficulty.

A final report on reading strategies was published by Schultheis and Napoli (1975). The strategies were categorized into three approaches: avoidance, simplification, and improvement. The first two strategies overlooked the problems faced in the environment outside the classroom. Ignoring or simplifying reading requirements would not adequately prepare students for positive transfer of skills. The improvement method considered the need for transfer; but, overall, the article

introduced no innovative concepts.

Scott (1975) changed the focus from his initial study (1974) of reading rate to the more general factor of reading levels. He chose students from three high schools and administered the Nelson-Denny Reading Test as a measurement of reading levels. Results showed that student reading ability spanned limits of the testing instrument (seventh to beyond fourteenth grade). The typical business student was reading at grade level. The general conclusion reached by the author indicated a wide dispersion of reading levels in the business classrooms. He suggested that teachers correlate reading materials with individual reading grade levels.

Moreover, Scott concluded the results of a sequel study in which materials were correlated with individual reading levels. Unlike the materials used in previous studies which were arbitrarily chosen, teachers controlled the materials via use of readability formulae. Scott noted that the gains made by students were significant at the .05 level, when readability was 8.5 grade level or lower. He also indicated that as reading difficulty increased, the gain made by students decreased. Therefore, Scott concluded that realization on the part of teachers and publishers of still existing problems would ultimately lead to mastery of material on the part of students.

Returning to the concept of a career-oriented approach to content teaching, Cohen and West (1978) published findings from their investigation into the School/Job match of career requirements. Based on a survey of New York State bookkeeping employees and their employers, Cohen and West determined employment needs for job success and material taught in high school bookkeeping classes. The survey, in the form of a questionnaire, revealed that major discrepancies exist between school curriculum and employment requirements. Although the results were reported in the form of statements rather than statistics, the conclusions were emphatic. School curricula should not remain stagnant. There should be continuous reevaluation of existing high school programs to ensure relevant instruction. Cohen and West reemphasized this need and corroborated findings of other authors concerning the need for career-oriented skills in the content areas. Cohen and West have provided the background information for determining necessary reading skills. These studies were landmark in their importance to the field of infusing reading with content classes.

Centering on the findings of West and others, the Delta Pi Epsilon research summary (1978) listed various discrepancies existing between the bookkeeping/accounting curricula and the world of work. Although the outline

was concerned with business tasks that were not specifically labeled as reading skills, some interesting conclusions could be drawn. This summary stated that the tasks covered in the high school accounting/bookkeeping classes were rarely performed by entry-level workers. Furthermore, the textbooks used in the classroom did not adequately provide the instructional material necessary to prepare students for occupations in the accounting/bookkeeping fields. Finally, the summary reported results of a survey in which accounting graduates ranked oral and written communication as a necessary skill and they further stated that these areas were not receiving enough emphasis in the present curriculum.

In the final study reviewed, Seifert (1979) focused on the concepts of Reading-to-do versus Reading-to-learn. The Seifert study attempted to replicate the study of Sticht but the subjects involved were navy personnel. These subjects included 180 adults divided into categories of students, instructors, and workers. Seifert concluded that the longer the person was away from the school environment, the less necessity for reading-to-learn. Reading-to-do appeared the major concern of professional people. The author viewed this analysis as important because the information provided could be used in planning programs which would help adults learn

literacy skills needed to function in a job. This study, along with others presented in this literature review, strengthened the case for a career-oriented approach to be instituted in the secondary school curricula.

Summary

To summarize the review of literature, the research of the last thirty years has been divided into two general areas. The first area was concerned with the student's ability to comprehend the subject matter. The second area of literature involved the use of a career-oriented approach infusing reading skills into the content areas.

In an endeavor to classify the problems encountered in acquiring these bookkeeping skills, researchers have focused on the areas of vocabulary difficulty, student reading levels, and textbook readability. The findings of these studies included a significant correlation between vocabulary development and reading level with bookkeeping achievement. In addition, readability levels of textbooks were found to be at such varying ranges that researchers concluded this factor must be considered when choosing instructional materials.

Having classified the areas of concern, researchers presented various methods of improving bookkeeping instruction to aid student comprehension. These

strategies included a "hands on" approach to learning vocabulary, a concentration on oral and written communication skills and the SQ3R approach to teaching reading skills.

Research into the career-oriented approach concluded that many of the textbooks were outdated in respect to the skills needed for entry-level positions. In addition, researchers recognized the varying abilities of students enrolled in bookkeeping classes and purported that this approach could be used as a means of circumventing these problems. Suggestions for alleviating these concerns included the use of informal measures to assess student strengths and weaknesses, contact between companies and schools to determine skills transferable to the world of work and curriculum modification to remove those operations no longer considered essential in the bookkeeping field and to aid those concepts needed for job success.

In conclusion, the main objective of the bookkeeping curriculum should be to provide students with marketable skills. If content revision is necessary, as the literature seemed to indicate, then curriculum modification should be immediate. The literature has presented the problems and provided suggestions for revision. Now a serious attempt should be made to provide a solution.

The following study is an attempt to characterize the reading needs of bookkeeping students as seen by the school and the work community. The results of the Job and Curriculum Reading Task Analyses will demonstrate the cohesion or discrepancies existing in the job/school match. This study may then serve as the basis for resulting curriculum revision.

CHAPTER III

PROCEDURE

This chapter explains the procedure and methods used in formulating this study.

The procedure is divided into three steps to correspond with the three questions asked in the statement of the problem.

First, a Job Reading Task Analysis (JRTA) was prepared for distribution to forty companies in three designated New Jersey counties. To understand the reading tasks performed by entry-level bookkeepers, the literature was researched for ideas, the West (1973) and Sticht (1975) job task analyses were reviewed and business teachers from Ridge High School, Basking Ridge, New Jersey, were asked for suggestions. The final product sent to the employers was based on the bookkeeping skills proposed in the literature, and samples and suggestions from the other sources. The finalized form also contained reading skills which represent the reading-to-learn and reading-to-do categories.

The JRTA itself consisted of a two-part survey. The first part was a general job description of the reading requirements of an entry-level bookkeeper. The

employer was asked to agree or disagree with description. If there was disagreement, space was provided for revision or general comments. The second part of the analysis involved a checklist of twenty statements concerning the reading tasks in an entry-level position. For each statement, the employer checked the level of importance (Major Factor, Minor Factor, and Not Important). Again, additional space was provided for employer's comments. The JRTA is presented in Appendix A.

Similarly, teachers in twenty-five school districts were provided with a Curriculum Reading Task Analysis (CRTA). The CRTA was a variation of the JRTA with emphasis placed on the reading skills needed to comprehend bookkeeping material. This checklist included the same twenty statements found in the JRTA with some grammatical changes. The term employee found in the JRTA was changed to student. Furthermore, initial statements utilized the present tense implying the student needed the skill immediately and the final nine statements implied future needs of the student for job success. The teachers, like the employers, checked the level of importance (Major Factor, Minor Factor, or Not Important). Finally, additional space was provided for comments. A sample of the CRTA is located in Appendix B.

Before the surveys were sent to the companies and school districts, they were reviewed by members of the business department of Ridge High School for accuracy and thoroughness.

The last phase of this procedure consisted of qualitative and statistical analyses of the data collected from the two surveys. Results of the JRTA and CRTA were tabulated by frequency and ranked by priority. Using these results, the correlation coefficient, level of significance, and the degree of the relationships between the two surveys were calculated. Through the aid of the Santos' Classification Scheme for Reading Questions (1976) and the statistical evidence acquired, a qualitative analysis determined the relationship between reading skills designated by industry and those perceived by teachers preparing students for bookkeeping positions in industry.

Subjects

The subjects consisted of businesses and schools in Middlesex, Morris, and Somerset counties. Companies were selected on the basis of size, and type of service provided. The employers were asked to complete an information sheet giving the name and location of the company, total number of employees and number of employees in the bookkeeping/accounting department.

Data acquired from these sheets are presented in Table 1. Teachers surveyed were from the same three counties in order to provide a logical comparison to the work communities selected. Teachers were asked to give the name and location of the school, number of years teaching experience, degree held, and courses taught. These data are presented in Table 2.

TABLE 1

BUSINESSES SURVEYED IN JRTA

County	Job Cluster Designation	Number of Employees	Number of Employees in Bookkeeping/ Accounting Dept.
Middlesex	1	1,000	35
	4	30	1
	4	30	3
	3	7	1
	2	6	1
Morris	3	5,000	150
	1	900	26
	3	700	300
	4	700	64
	4	260	17
	3	225	11
	3	148	30
	3	115	20
	3	67	6
	3	62	10
	5	5	1
	1	2	1
	3	no information given	

TABLE 1 (Continued)

County	Job Cluster Designation	Number of Employees	Number of Employees in Bookkeeping/ Accounting Dept.
Somerset	4	1,000	41
	4	54	8
	5	27	3
	3	8	3
	4	8	2
	5	6	1

Key: Job Cluster Designation

1 - Medical Services
2 - Mechanical
3 - Industrial (Production Work/Technology)
4 - Persuasive (Vending, General Sales)
5 - Social/Business (Law, Finance, and Communications)

TABLE 2

TEACHERS SURVEYED IN CRTA

County	Degree	Years Experience	Courses Taught		
			Recordkeeping	Bookkeeping	Accounting
Middlesex	Ed.D.	17		x	x
	B.S.	6		x	x
	Ed.M.	19		x	
	M.A.	18		x	x
	B.S.	5	x	x	x
Morris	M.A.	10		x	x
	M.A.	8			x
	M.A.	10		x	x
	B.A.	15	x	x	
	M.A.	6		x	x
	M.A.	25		x	x
	B.A.	4	x	x	x

TABLE 2 (Continued)

County	Degree	Years Experience	Courses Taught		
			Recordkeeping	Bookkeeping	Accounting
Somerset	M.A.	7		x	x
	M.S.	11		x	x
	M.S.	45		x	x
	B.S.	5	x		x
	M.A. + 30	18	x		x
	M.A.	7	x	x	x

CHAPTER IV

RESULTS OF THE STUDY

Chapter IV presents the data collected in this study.

Findings Regarding Questions

Question 1: What reading skills are required by employers for entry-level bookkeepers?

In response to the description of necessary reading tasks (Appendix A, Part II), 78% of the respondents agree that the given reading requirements are accurate.

Table 3 presents the ranking of Job Reading Tasks by employers. Rankings are based on twenty-four companies responding to the survey. In the rankings of priority, all employers responding regard the ability to deal with concrete material and following directions to meet specific deadlines as equally important.

When the Santos Classification Scheme (Appendix F) is applied to the rankings, a further clarification of reading skills emerges. This procedure divides reading skills into six general categories. The results of this analytical division shows that one task applies to the Recognition/Recall category with a ranking of 1.5.

TABLE 3

THE RANKING OF JOB READING TASKS BY EMPLOYERS
(N = 24)

Rank	Job Reading Task
1.5	The ability to deal with concrete, factual (computational) material.
1.5	Complete directed tasks within specified deadlines.
3	Deal with such forms as work orders, job orders, vouchers, claims, purchase orders, etc.
4	Show competence in completing tasks manually and through the use of computerization.
5	Needs to read notes, memos, or letters.
6.5	Interpret task requirements from written and oral instructions.
6.5	Evaluate information from written requests.
8	Write business reports.
9	Read tables and other graphic materials.
10.5	Summarize information retaining salient points.
10.5	Needs to symbolically represent an object via an identifying code.
12	Make comparisons between materials or methods and choose the best approach.
13	Needs to locate information from catalogues.

TABLE 3 (Continued)

Rank	Job Reading Task
14	Needs to express himself/herself in informal situations.
15.5	Needs to read policy manuals, regulations, and instructions.
15.5	Needs a highly technical vocabulary.
17	Needs to locate information from company manuals.
18	Needs to locate information from telephone directories.
19	Needs to locate information from technical references.
20	Needs to locate information from dictionaries.

Translation skills encompass seven statements with an average ranking of 8.8. The nine tasks included in the Application category average 11.9. Analysis reading skills include three statements averaging 7.5 in the ranking of priorities. Synthesis and Evaluation reading skills are ranked 14 and 12 respectively.

Some rankings occur in more than one category due to the overlapping of reading skills involved. Actual percentages for the JRTA can be found in Appendix C.

Question 2: According to teachers, what reading skills are rated as being important in the bookkeeping curriculum?

Table 4 presents the ranking of Curriculum Reading Tasks by teachers. Priorities are based on the responses of eighteen high school teachers. The respondents are in total agreement that the ability to deal with concrete material, evaluate information from written requests and interpret tasks from written and oral instructions are the most important reading skills for students.

According to the Santos Scheme, Recognition/Recall reading skills rank 1.33. The average ranking for the seven Translation skills statements is 9.0. Application reading skills average 12.3 in the ranking of priorities. The three Analysis tasks have an average ranking of 7.4 Finally, Synthesis and Evaluation reading skills are rated as 12 and 8 respectively. Again, some numbers are

TABLE 4

THE RANKING OF CURRICULUM READING TASKS
BY TEACHERS
(N = 18)

Rank	Reading Task
1.33	The ability to deal with concrete, factual (computational) material.
1.33	Needs to evaluate information from written requests.
1.33	Needs to interpret tasks required from written and oral instructions.
4	Needs to complete directed tasks within specified deadlines.
5	Needs to deal with business forms.
6	Needs to summarize information retaining salient points.
7	Needs to write sample business reports.
8	Would need to make comparisons between materials or methods and choose the best approach.
9	Would need to show competence in manual and computerized tasks.
10	Needs to read notes, memos, or letters.
11	Would need to read policy manuals.
12	Needs an ability express himself/herself in various situations.
13	Needs to read tables and other graphic materials.

TABLE 4 (Continued)

Rank	Reading Task
14	Needs to locate information from technical references.
15	Needs a highly technical vocabulary.
16	Needs to locate information from dictionaries.
17	Must symbolically represent an object via code.
18	Needs to locate information from telephone directories.
19	Needs to locate information from company manuals.
20	Needs to locate information from catalogues.

repeated due to the multiple skills implied in the statement. The actual percentages for the CRTA are found in Appendix D.

A comparison of the JRTA/CRTA rankings by skill classification is included in Appendix E.

Question 3: What is the relationship between the existing bookkeeping curriculum and employment requirements?

Using the percentages of the JRTA and CRTA, the Spearman formula of rank correlation was used to compute the relationship between the two surveys. The result of this calculation is a correlation coefficient of .7536. Further statistical comparison shows this correlation to be significant at the .01 level of significance. Finally, squaring the coefficient demonstrates that the two surveys account for 57% of the reading skills presently taught in the bookkeeping curriculum and considered transferable to the world of work.

CHAPTER V

SUMMARY, DISCUSSION AND CONCLSUIONS

Summary

The purpose of this chapter is to discuss the results of the study and to offer possible explanations for the results while attempting to relate the explanations to the literature. The conclusions drawn are based on the present sample of businesses and schools and the findings of this study.

The questions asked in this study were:

1. What reading skills are required by employers for entry-level bookkeepers?

2. According to teachers, what reading skills are rated as being important in the bookkeeping curriculum?

3. What is the relationship between the existing bookkeeping curriculum and the employment requirements?

Twenty-four companies and eighteen school districts participated in this study. Data collected included the information obtained from the JRTA and CRTA.

Discussion

The two major factors under discussion are the relationship between employment and classroom reading

requirements and the preference for teaching reading-to-do skills rather than reading-to-learn.

Although there is not a perfect correlation between the JRTA and CRTA, the study shows a significant relationship between the two. These results indicate that, at least in the area of reading skills, teachers and employers share many of the same requirements. The discrepancies which exist may be based on specific tasks unique to the classroom/work situation. Therefore, the respondents would rank them as low priority since these tasks were not applicable to the people surveyed.

Based on the results, the study is in agreement with the work of Sticht as to the importance of the JRTA/CRTA in determining reading needs. As mentioned in the literature and evidenced in the study, these informal methods can provide a basis for implementing the reading skills needed to compete successfully in the world of work.

Other studies in the literature use the task analysis. Through the use of a task analysis, the studies of West (1973) and Cohen and West (1978) reveal discrepancies in the Job/School match. The focus of these studies center on the technology involved in bookkeeping skills rather than on reading tasks involved in these procedures. Therefore, a comparison of findings can not be determined. It can be concluded,

however, that the job task analysis is a viable approach for assessing the consistencies or discrepancies of a variety of activities involved in a given occupation.

Unlike the literature which has concerned itself with either reading-to-learn or reading-to-do categories, this study indicates that both categories are needed for job success. The Seifert study (1979) concludes that reading-to-learn skills become less and less important as the employee became farther removed from the school environment. In contrast, this study indicates the six classifications of the Santos Reading Scheme were dispersed throughout the JRTA/CRTA ranking of priorities. The only skill considered paramount by both groups was the need for dealing with concrete, factual material. Since these six categories encompass both facets of reading instruction, there is a clear indication that both are necessary. Even though the reading-to-learn concept may be used less frequently as the person progresses in the job, the surveys demonstrate it should not be disregarded in the content curriculum.

Finally, this study does not attempt to list specific reading problems as do those of House (1953) and Musselman (1959). Moreover, the use of a job task analysis does not label strengths and weaknesses of textbooks or purport that its use will eliminate all the problems still existing in the Job/School match.

Its use, however, provides an informal assessment for evaluating a curriculum in the area of teaching skills transferable to the world of work.

Conclusions

The findings of this study led this writer to conclude the following:

1. Reading skills for the bookkeeping curriculum consist of those needed for understanding subject matter (reading-to-learn) and those which can be transferred beyond the classroom to the world of work (reading-to-do).

2. The JRTA can be used as a predictor for determining the reading needs of an entry-level bookkeeper.

3. The CRTA can be used as an informal means of assessing the reading skills considered important in the bookkeeping curriculum.

4. There is a significant relationship at the .01 level between the priorities of the JRTA and CRTA. Statistically, 57% of the CRTA priorities are transferable to the job world.

Recommendations

1. Instead of curriculum modification which would eliminate the reading-to-learn approach and replace it with reading-to-do, curriculum revision should focus on infusing both methods. Exposing the student to both approaches not only allows the student to acquire the

transferable reading skills required but also simulates the routine encountered in a particular field of work.

2. Since the majority of the content deals with "hands on reading," the assessments used to check progress should be of a practical nature. Standard testing procedures may hinder progress because they presuppose average reading levels. Emphasis on business application allows for recognition of acquired skills needed in the world of work.

Suggestions for Further Research

The following are suggestions for further research in the area of curriculum modification.

1. The use of a Student Reading Task Analysis in content areas should be examined. This informal assessment of reading skills would aid students and teachers in determining strengths and weaknesses.

2. Bookkeeping textbooks should be evaluated as to the appropriateness of topics covered, not simply as to the readability. A comparison of employment needs with content emphasis should be explored and those topics no longer considered essential should be eliminated.

3. Since a JRTA for all subject areas would be time consuming, a general list of employment skills should be determined for various content areas. This

general list should then be compared individually to student needs and content material.

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APPENDIX A

SAMPLE OF JRTA

BOOKKEEPING: JOB TASK ANALYSIS

I. GENERAL INFORMATION

Name of Company/Employer _____

Total Number of Employees _____

Number Employed in Bookkeeping/Accounting _____

Location (Town and County) _____

II. Please read the following job description for an entry-level bookkeeper:

> Requires verbal and reasoning ability to read and understand communications received, make appropriate dispositions or initiate necessary actions. Requires perceptual speed to review records and reports for accuracy and completeness, and requires ability to prepare technical reports.

A. Do you agree with this description? YES NO

B. If the answer is "NO," please delete any part which is not applicable, or add any comments below.

III. After reading the following statements, please check their importance to the field of bookkeeping. Please feel free to comment after any statement.

	Major Factor	Minor Factor	Not Important	Comments
A. The employee needs a highly technical vocabulary to comprehend job materials and required tasks.				
B. The employee needs the ability to express himself/herself in various informal situations.				
C. The employee needs to summarize information retaining salient points.				
D. The employee needs to write business reports (weekly, monthly, year-end statements.				
E. The employee needs to read notes, letters, or memos.				
F. The employee needs to evaluate information required from written requests.				

	Major Factor	Minor Factor	Not Important	Comments
G. The employee needs the ability to deal with concrete, factual (computational) material.				
H. The employee needs the ability to interpret task requirements from written or oral instruction.				
I. The employee needs the ability to make comparisons between materials or methods and choose the best approach.				
J. The employee needs to deal with forms such as work orders, job orders, vouchers, claims, purchase orders, etc.				
K. The employee reads tables and other graphic materials (lists, charts, two or more column tables).				
L. The employee must symbolically represent an object via an identifying code (stock #, nomenclature) and/or by itemizing its distinguishing physical attributes.				

	Major Factor	Minor Factor	Not Important	Comments
M. The employee needs to read policy manuals, regulations, and instructions.				
N. The employee needs to locate information from such books as:				
1. telephone directories				
2. catalogues				
3. technical reference				
4. dictionaries				
5. company manuals				
6. other (Please list.)				
O. The employee must show competence in completing tasks manually and through the use of computerization.				
P. The employee needs to complete directed tasks within specified deadlines.				

APPENDIX B

SAMPLE OF CRTA

BOOKKEEPING/ACCOUNTING: CURRICULUM TASK ANALYSIS

I. GENERAL INFORMATION

Name (Optional) _____

School _____

Total Number of Students Enrolled _____

Location (Town and County) _____

Years of Teaching Experience _____

Degree Held _____

Subjects Taught _____

Would you like a copy of these results? YES NO

II. DIRECTIONS

After reading the following statements, please check their importance to the study of bookkeeping/accounting. Please feel free to comment after any statement.

	Major Factor	Minor Factor	Not Important	Comments
1. The student needs a highly technical vocabulary to comprehend text materials and required tasks.				
2. The student needs an ability to express himself/herself in various situations (e.g. group discussion).				
3. The student needs to summarize information retaining salient points (paraphrasing text material).				
4. The student needs to write sample business reports (e.g. year-end statements).				
5. The student needs to read notes, letters, or memos (as simulation exercise).				
6. The student needs to evaluate information required from written requests (word problems, business application).				

	Major Factor	Minor Factor	Not Important	Comments
7. The student needs the ability to deal with concrete, factual (computational) material.				
8. The student needs the ability to interpret task requirements from written or oral instructions (for solving problems, tests).				
9. The student needs to deal with forms such as work vouchers, job orders, claims, purchase orders, etc.				
10. The student needs to read tables and other graphic materials (lists, charts, two or more column tables).				
11. The student must symbolically represent an object via an identifying code (stock #, nomenclature) and/or by itemizing its distinguishing physical attributes.				
12. The student needs to complete directed tasks within specified deadlines.				

	Major Factor	Minor Factor	Not Important	Comments
13. The student would need to read policy manuals, regulations, and instructions.				
14. The student would need to locate information from such books as:				
A. telephone directories				
B. catalogues				
C. dictionaries				
D. technical references				
E. company manuals				
F. other (Please list.)				
15. The student would need to show competence in completing tasks manually and through the use of computerization.				
16. The student would need the ability to make comparisons between materials or methods and choose the best approach (for problem-solving, completing tests).				

APPENDIX C

JRTA PERCENTAGES

III. After reading the following statements, please check their importance to the field of bookkeeping. Please feel free to comment after any statement.

Responses / Requests $\frac{24}{40} = 60\%$

	Major Factor	Minor Factor	Not Important	Comments
A. The employee needs a highly technical vocabulary to comprehend job materials and required tasks.	29%	42%	29%	Can be acquired on job
B. The employee needs the ability to express himself/herself in various informal situations.	29	50	21	
C. The employee needs to summarize information retaining salient points.	46	25	29	
D. The employee needs to write business reports (weekly, monthly, year-end statements).	46	38	16	Math - more important.
E. The employee needs to read notes, letters, or memos.	54	46		
F. The employee needs to evaluate information required from written requests.	50	29	21	

	Major Factor	Minor Factor	Not Important	Comments
G. The employee needs the ability to deal with concrete, factual (computational) material.	100%			
H. The employee needs the ability to interpret task requirements from written or oral instructions.	50	29	21	
I. The employee needs the ability to make comparisons between materials or methods and choose the best approach.	38	62		
J. The employee needs to deal with forms such as work orders, job orders, vouchers, claims, purchase orders, etc.	71	29		
K. The employee reads tables and other graphic materials (lists, charts, two or more column tables).	46	29	25	
L. The employee must symbolically represent an object via an identifying code (stock #, nomenclature) and/or by itemizing its distinguishing physical attributes.	46	25	29	

	Major Factor	Minor Factor	Not Important	Comments
M. The employee needs to read policy manuals, regualtions, and instructions.	29%	42%	29%	
N. The employee needs to locate information from such books as:				
1. telephone directories	25	46	29	
2. catalogues	33	38	29	
3. technical reference	25	42	33	
4. dictionaries	21	46	33	
5. company manuals	29	38	33	
6. other (Please list.)				Other dept. reports

	Major Factor	Minor Factor	Not Important	Comments
O. The employee must show competence in completing tasks manually and through the use of computerization.	62%	38%		
P. The employee needs to complete directed tasks within specified deadlines.	100			

APPENDIX D

CRTA PERCENTAGES

	Major Factor	Minor Factor	Not Important	Comments
1. The student needs a highly technical vocabulary to comprehend text materials and required tasks.	22%	44%	34%	
2. The student needs an ability to express himself/herself in various situations (e.g. group discussion).	39	34	27	
3. The student needs to summarize information retaining salient points (paraphrasing text material).	78	11	11	
4. The student needs to write sample business reports (e.g. year-end statements).	78	16	6	
5. The student needs to read notes, letters, or memos (as simulation exercise).	55	34	11	
6. The student needs to evaluate information required from written requests (word problems, business application).	100			

	Major Factor	Minor Factor	Not Important	Comments
7. The student needs the ability to deal with concrete, factual (computational) material.	100%			
8. The student needs the ability to interpret task requirements from written or oral instructions (for solving problems, tests).	100			
9. The student needs to deal with forms such as work vouchers, job orders, claims, purchase orders, etc.	78	22		
10. The student needs to read tables and other graphic materials (lists, charts, two or more column tables).	34	66		
11. The student must symbolically represent an object via an identifying code (stock #, nomenclature) and/or by itemizing its distinguishing physical attributes.	17	77	6	
12. The student needs to complete directed tasks within specified deadlines.	94	6		

	Major Factor	Minor Factor	Not Important	Comments
13. The student would need to read policy manuals, regulations and instructions.	39%	44%	17%	
14. The student would need to locate information from such books as:				
A. telephone directories	17	28	55	
B. catalogues	11	39	50	
C. dictionaries	22	28	50	
D. technical references	22	50	28	
E. company manuals	11	55	34	
F. other (Please list.)				Tax forms, newspapers, text, magazines

	Major Factor	Minor Factor	Not Important	Comments
15. The student would need to show competence in completing tasks manually and through the use of computerization.	66%	17%	17%	
16. The student would need the ability to make comparisons between materials or methods and choose the best approach (for problem-solving, completing tests).	66	34		

$\frac{\text{Responses}}{\text{Requests}}$ $\frac{18}{25} = 72\%$

APPENDIX E

SAMPLES OF STATISTICAL ANALYSES

RANKING OF PRIORITIES

Spearman Formula for Rank Correlation $r = 1 - \left(\frac{6 \Sigma D^2}{n(n^2 - 1)} \right)$

Test of Significance $z = r' \sqrt{n - 1}$

JRTA	CRTA	Difference (D)	D^2
1.5	1.33	.17	.0289
1.55	4	-2.5	6.25
3	5	-2	4
4	9	-5	25
5	10	-5	25
6.5	1.33	5.17	26.7289
6.5	1.33	5.17	26.7289
8	7	1	1
9	13	-4	16
10.5	6	4.5	20.25
10.5	17	-6.5	42.25
12	8	4	16
13	20	-7	49
14	12	2	4
15.5	15	.5	.25
15.5	11	4.5	20.25
17	19	-2	4
18	18	0	0

JRTA	CRTA	Difference (D)	D^2
19	14	0	25
20	16	4	16
			327.7367

$r = .7536$ $r^2 = .5679$ (57%) $z = 3.285$

RANKING OF PRIORITIES

VIA SANTOS' CLASSIFICATION

READING SCHEME

Classification	JRTA		CRTA	
Recognition/Recall	1.5		1.33	
Translation	1.5		4	
	6.5		1.33	
	8		7	
	9		13	
	10.5		6	
	10.5		17	
	10.5		15	
Average Ranking		8.8		9.0
Application	1.5		1.33	
	3		5	
	4		9	
	12		1.33	
	13		20	
	17		19	
	18		18	
	19		14	
	20		16	
Average Ranking		11.9		12.3
Analysis	5		10	
	6.5		1.33	
	15.5		11	
Average Ranking		7.5		7.4
Synthesis	14		12	
Evaluation	12		8	

APPENDIX F

SANTOS' CLASSIFICATION SCHEME FOR READING QUESTIONS

SANTOS' CLASSIFICATION SCHEME

FOR READING QUESTIONS

1. Recognition or Recall Questions

A reading question falls under this category if it can be answered verbatim with specific information found in the selection read, and if it requires the reader to repeat or locate the information, as in:

a. responding to direct factual questions in which the fact is given in the selection read;

b. emunerating or making a list of information presented in the selection read;

c. quoting the author or character in the selection;

d. recalling who said a given quotation taken verbatim from the selection read;

e. reciting a stanza of a poem, an essay, rules, from memory;

f. reading aloud the part that answers a factual question, or the part called for.

2. Translation Questions

A reading question falls under this category if it requires the reader to restate a specific information in his own words or in another form of communication, while keeping the idea basically unchanged, as in:

a. explaining in his own words the meaning of technical terms, vocabulary words, and stated meanings:

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[1]I. Santos. Cited in H. W. Forgan & C. T. Mangrum II, Teaching Content Area Reading Skills: A Modular Pre-service and Inservice Program. Columbus, Ohio: Merrill, 1976), pp. 176-183.

b. restating a problem, generalization, principle, rule, procedure, in his own words;

c. paraphrasing parts of a selection, or summarizing a selection;

d. retelling a selection according to a given set of topics; describing or retelling parts of events of a selection to prove a point; retelling additional stories related to the topic in his own words;

e. following printed directions;

f. changing poetry to prose or vice versa; changing a statement to a question;

g. illustrating or drawing information recorded verbally; describing a picture, poster, sketch, drawing, painting, or object in his own words;

h. presenting information by making a graph, diagram, chart, table, or map.

3. Application Questions

A reading question falls under this category if it requires the reader to recall an appropriate and previously learned skill or abstraction (generalization, principle, theory, rule, technique, or procedure) and then use it to explain or solve a problematic situation which is presented in a new context, as in:

a. making use of previous knowledge to make comparisons, observations, and explanations, or to answer a question;

b. applying new information or principles learned from the selection read to explain a phenomena or a problematic situation;

c. using a theory or principle to predict the probable effects of certain factors;

d. applying rules or organizing ideas, as in:

(1) classifying or grouping

(2) indexing

(3) outlining

(4) rearranging a given set of ideas alphabetically, chronologically, or in proper sequence;

e. applying arithmetical procedures and skills to solve and/or explain arithmetical problems;

f. applying skill in locating information, as in:

(1) a dictionary

(2) an encyclopedia

(3) an atlas

(4) other general references;

g. identifying and/or giving examples to fit a previously-stated definition or abstraction;

h. identifying elements of style used in the selection read, such as rhyme, free verse, satire;

i. identify propaganda devices used in persuasive material, facts vs. opinions, author's biases or prejudices, and emotive language;

j. identifying literary devices of humor, wit, satire, mood, tone, and figures of speech.

4. Analysis Questions

A reading question falls under this category if it requires the reader to identify the component parts of a given communication, and/or to determine relationships among these component parts or among parts of ideas as in:

a. indicating which are the assumptions, conclusions, generalizations, or supporting facts explicit in a given communication;

b. making inferences, conclusions, generalizations, or implications; anticipating or predicting outcomes from evidence presented;

c. identifying in a given communication what information is given, what is not given,

and/or what is to be solved in a story problem;

d. identifying clues from which inferences may be drawn, as in:

(1) connotative expressions

(2) character's actions, traits, remarks

(3) the setting

(4) figurative language

(5) semantic variations;

e. identifying relationships, as in:

(1) cause-effect relationships

(2) sequential relationships

(3) logical relationships (analogies, antecedents)

(4) past-present relationship

(5) main ideas and details

(6) central theme;

f. indicating whether ideas are similar, different, contradictory, supportive, related, relevant, irrelevant, essential, extraneous, in proper sequence, true or false, right or wrong, good or bad;

g. identifying author's purpose and point of view;

h. identifying parts of a given communication which makes the communication false.

5. Synthesis Questions

A reading question falls under this category if it offers a variety of possibilities and allows the reader freedom of expression. At the same time it requires him to compose a unique communication, devise a proposed procedure, or derive new relationships, as in:

a. using a given word, phrase, or expression in his own words;

b. rearranging a given set of ideas into unique sentences or paragraphs; substituting words or phrases to make ideas more correct;

c. writing an original rhyme, poem, essay, or story;

d. reading aloud the part called for and giving the passage his own expression; dramatic reading; choral reading;

e. pantomiming; retelling or dramatizing a selection or parts of it using one's own words and expressions; presenting a pageant;

f. relating a personal experience;

g. discussing or giving a short talk or extemporaneous speech on a given topic; telling an original story;

h. submitting a plan for a project needing construction, an experiment, a program, a skit, or a dramatization;

i. suggesting solutions to a problem; listing possible problems that might sum up a situation;

j. suggesting different titles to a given communication; suggesting scenes or events pictured from a given communication;

k. formulating rules to observe in performing or judging a performance or presentation;

l. giving different endings to a given communication;

m. relating a general problem to a local situation;

n. sharing personal experiences; relating one's personal experience to the content of what is read or to the question asked;

o. pretending;

p. giving an opinion or making decisions without justifying one's views.

6. Evaluation Questions

A reading question falls under this category if it requires the reader to determine whether a given communication meets standards set up by the student herself or presented to her. It also requires her to make decisions and to support her views in her own words, as in:

a. judging agreement between ideas or sources of information, and justifying one's views;

b. forming an opinion or taking a stand on an issue, and justifying one's views;

c. indicating whether a conclusion, generalization, main theme, or thesis logically follows the facts presented; selecting the best conclusion from a set of suggested conclusions, and justifying one's views;

d. indicating whether ideas are similar, different, contradictory, supportive, related, relevant, essential, or in proper sequence, and justifying one's views;

e. judging or criticizing a given communication, and justifying one's views for:

accuracy	completeness
authenticity	practicability
relevance	reasonableness
adequacy	authoritativeness
value	logical consistency
imagination	etc.;

f. judging the relative merits of information from different sources, or sources of information, and justifying one's view;

g. judging characters in a story, and justifying one's views;

h. evaluating suggested endings to a story, summaries, a performance, a declamation, an oration, a speech, etc., and justifying one's views and/or suggesting ways of improvement;

i. evaluating pictures for accuracy, appropriateness, suitability, richness of imagination, and justifying one's views;

j. evaluating statements for ambiguities, overspecificity, omissions, distortions, inconsistencies, inaccuracies, overstatements, and justifying one's views;

k. judging and proving the truth or falsity of statements by pointing out supportive statements or evidence, and justifying one's views.